Amendments to the Claims:

1. (Canceled)

2. (New) A microelectromechanical (MEMS) structure on a substrate, comprising:

a platform connected with a set of one or more bimorph flexures; and

the set of bimorph flexures connecting the platform with the substrate, each bimorph flexure comprising a first material and a second material having substantially similar coefficients of thermal expansion (CTEs).

3. (New) The MEMS structure of claim 2, wherein the first and second materials have substantially different intrinsic residual stress (IRS) characteristics.

4. (New) The MEMS structure of claim 3, wherein each bimorph flexure has a curvature, the curvature resulting substantially from the difference in IRS characteristics of the first and second materials and not resulting substantially from the difference in the CTEs of the first and second materials.

5. (New) The MEMS structure of claim 3, wherein each bimorph flexure has a curvature that is not substantially sensitive to changes in temperature.

6. (New) The MEMS structure of claim 3, wherein each bimorph flexure has a curvature that is the sum of a first component proportional to the IRS in the bimorph flexure and a second component proportional to the CTE mismatches in the bimorph flexure, the first component being larger than the second component by a factor of approximately one thousand or more.

7. (New) The MEMS structure of claim 6, wherein the first component is larger than the second component by a factor of approximately one thousand or more at normal operating temperatures of the MEMS structure.

8. (New) The MEMS structure of claim 3, wherein the first material comprises silicon and the second material comprises silicon nitride, or the first material comprises polysilicon and the second material comprises ceramic, SiC, or silicon nitride (SixNy).

9. (New) The MEMS structure of claim 3, wherein the first material comprises polysilicon deposited under a first set of conditions and the second material comprises polysilicon deposited under a second set of conditions, wherein the first and second set of conditions are different so as to induce different IRS characteristics in the first and second materials.

10. (New) The MEMS structure of claim 3, wherein each bimorph flexure comprises a two-layer structure, the first material comprising a first layer and the second material comprising a second layer that is external to the first layer.

11. (New) The MEMS structure of claim 10, wherein the second layer extends over a portion of the first layer that is less than the entire length of the first layer.

12. (New) The MEMS structure of claim 11, wherein the second layer provides a residual stress difference between the top and bottom portions of the first layer.

13. (New) The MEMS structure of claim 3, wherein:
each bimorph flexure has a curvature that elevates the platform above the substrate; and
the platform is an actuator segment or mirror segment.

14. (New) A method for fabricating a microelectromechanical (MEMS) structure, the method comprising:
forming a platform connected with a set of one or more bimorph flexures; and
for each bimorph flexure in the set of bimorph flexures:
forming a first layer of the bimorph flexure, the first layer comprising a first material; and

forming a second layer of the bimorph flexure, the second layer comprising a second material, the first and second materials having substantially similar coefficients of thermal expansion (CTEs).

15. (New) The method of claim 14, wherein the first and second materials have substantially different intrinsic residual stress (IRS) characteristics.

16. (New) The method of claim 15, wherein each formed bimorph flexure has a curvature, the curvature resulting substantially from the difference in IRS characteristics of the first and second materials and not resulting substantially from the difference in the CTEs of the first and second materials.

17. (New) The method of claim 15, wherein the first material comprises silicon and the second material comprises silicon nitride, or the first material comprises polysilicon and the second material comprises ceramic, SiC, or silicon nitride (SixNy).

18. (New) The method of claim 15, wherein forming the second layer comprises forming the second layer external to the first layer.

19. (New) The method of claim 15, wherein forming the second layer comprises forming the second layer to extend over a portion of the first layer that is less than the entire length of the first layer.

20. (New) The method of claim 15, wherein the first and second layers are formed under conditions that produce substantially different intrinsic residual stress (IRS) characteristics in the first and second materials.

21. (New) The method of claim 20, wherein:
forming the first layer comprises tuning the residual stress of the first layer; and

forming the second layer comprises forming the second layer under a specific ratio of the reactant gasses, deposition pressure, and deposition temperature to produce a desired residual stress of the second layer.